

WHAT IS CLAIMED IS:

1. An apparatus for simultaneously performing a TV reception function and a calling function in a multimode mobile phone supporting two or more
5 communication services, comprising:

a first Radio Frequency (RF) switch for separating a received signal into N communication services;

M diplexers associated with the communication services, for separating a signal received from the first RF switch into a call signal and a TV signal;

10 a second RF switch for applying the TV signal received from the diplexers to a TV tuner; and

a controller for controlling an overall operation of the multimode mobile phone and controlling the first RF switch and the second RF switch according to the received signal.

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2. The apparatus of claim 1, wherein the first RF switch includes one input port, N output ports, and N control ports.

3. The apparatus of claim 1, wherein the second RF switch includes one
20 input port, M output ports associated with the diplexers, and M control ports.

4. The apparatus of claim 1, wherein the communication services comprises at least one of a Code Division Multiple Access (CDMA) service, a Personal Communications Service (PCS) service and a Global Positioning System (GPS) service.
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5. The apparatus of claim 1, wherein the TV signal comprises an audio and video signal.

6. An apparatus for simultaneously performing a TV reception function
30 and a calling function in a tri-mode mobile phone capable of supporting a Code Division Multiple Access (CDMA) service, a Personal Communications Service (PCS) service and a Global Positioning System (GPS) service, the apparatus comprising:

a first Radio Frequency (RF) switch for switching a received signal to a first diplexer, a second diplexer or a GPS RF switch;

the first diplexer for separating a signal received via the first RF switch into a PCS signal and a TV signal;

5 the second diplexer for separating a signal received via the first RF switch into a CDMA signal and a TV signal; and

a second RF switch for switching the TV signal from the first diplexer and the second diplexer to a TV tuner.

10 7. The apparatus of claim 6, wherein the first RF switch includes one input port, three output ports, and three control ports.

8. The apparatus of claim 6, wherein the second RF switch includes one input port, two output ports, and two control ports.

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9. The apparatus of claim 6, wherein in a PCS mode, the first RF switch is switched to the first diplexer; the first diplexer applies a signal received from the first RF switch to a PCS diplexer if the received signal is a PCS signal, and applies the received signal to a TV tuner via the second RF switch if the received signal is a TV
20 signal; and the second RF switch is switched to the first diplexer and applies the received TV signal to the TV tuner.

10. The apparatus of claim 6, wherein in a CDMA mode, the first RF switch is switched to the second diplexer; the second diplexer applies a signal received
25 from the first RF switch to a CDMA diplexer if the received signal is a CDMA signal, and applies the received signal to a TV tuner via the second RF switch if the received signal is a TV signal; and the second RF switch is switched to the second diplexer and applies the received TV signal to the TV tuner.

30 11. The apparatus of claim 6, wherein in a GPS mode, the first RF switch is switched to a GPS RF switch.

12. The apparatus of claim 6, wherein the TV signal comprises a video

signal and an audio signal.

13. The apparatus of claim 6, wherein the TV signal can be viewed and listened to via a screen and speaker of the tri-mode mobile phone.

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14. The apparatus of claim 6, wherein the tuner selectively selects a channel from the TV signal.

15. A method for simultaneously performing a TV reception function and
10 a calling function in a multimode mobile phone supporting two or more communication services, comprising the steps of:

separating a received signal into a corresponding communication service;

separating the communication service into a call signal and a TV signal, and performing a calling function or a TV reception function.

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16. The method of claim 15, further comprising:

enabling watching of TV on the multimode mobile phone when a phone call is not in session.

20 17. The method of claim 15, wherein the calling function and the TV reception function are simultaneously performed by receiving the call signal and the TV signal.

18. A method for simultaneously performing a TV reception function and
25 a calling function in a tri-mode mobile phone including a first Radio Frequency (RF) switch for switching a received signal to a first diplexer, a second diplexer or a GPS RF switch, the first diplexer for separating a signal received from the first RF switch into a PCS signal and a TV signal, the second diplexer for separating a signal received from the first RF switch into a CDMA signal and a TV signal, and a second RF switch for
30 switching the TV signal from the first and second diplexers to a TV tuner, the tri-mode mobile phone being capable of supporting a Code Division Multiple Access (CCDMA) service, a Personal Communications Service (PCS) service and a Global Positioning

System (GPS) service, the method comprising the steps of:

receiving a signal in a PCS mode of the tri-mode mobile phone;

if the received signal is a PCS signal, applying the PCS signal to a PCS duplexer via the first diplexer to perform a calling function; and

5 if the received signal is a TV signal, applying the TV signal to the TV tuner via the first diplexer and the second RF switch to perform a TV reception function.

19. The method of claim 18, wherein in a PCS mode, the first and second RF switches are switched to the first diplexer.

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20. The method of claim 18, wherein the calling function and the TV reception functions are simultaneously performed by receiving the PCS signal and the TV signal.

15 21. A method for simultaneously performing a TV reception function and a calling function in a tri-mode mobile phone including a first Radio Frequency (RF) switch for switching a received signal to a first diplexer, a second diplexer or a GPS RF switch, the first diplexer for separating a signal received from the first RF switch into a PCS signal and a TV signal, the second diplexer for separating a signal received from
20 the first RF switch into a CDMA signal and a TV signal, and a second RF switch for switching the TV signal from the first and second diplexers to a TV tuner, the tri-mode mobile phone being capable of supporting a Code Division Multiple Access (CDMA) service, a Personal Communications Service (PCS) service and a Global Positioning System (GPS) service, the method comprising the steps of:

25 receiving a signal in a CDMA mode of the tri-mode mobile phone;

if the received signal is a CDMA signal, applying the CDMA signal to a CDMA duplexer via the second diplexer to perform a calling function; and

if the received signal is a TV signal, applying the TV signal to the TV tuner via the second diplexer and the second RF switch to perform a TV reception function.

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22. The method of claim 21, wherein in a CDMA mode, the first and second RF switches are switched to the second diplexer.

23. The method of claim 21, wherein the calling function and the TV reception functions are simultaneously performed by receiving the CDMA signal and the TV signal.

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24. The method of claim 21, wherein the TV signal comprises an audio and video signal.